WE CLAIM:

1. A method of diagnosing or monitoring inflammation in an animal comprising:

(a) determining the quantity of a post-translationally modified protein, other than phosphorylated tau, present in a body fluid of the animal; and

(b) determining if the quantity of the post-translationally modified protein is significantly altered compared to its level in the same body fluid from normal animals to determine if inflammation is present.

2. The method of Claim 1 wherein the body fluid is serum or plasma.

4. The method of Claim 1 wherein the protein is phosphorylated.

5. The method of Claim 1 wherein the protein is cysteinylated.

6. The method of Claim 1 wherein the quantities of two or more post-translationally modified proteins in one or more body fluids are determined.

7. The method of Claim 1 wherein the method is used to diagnose or monitor the inflammation associated with sepsis.

8. The method of Claim 1 wherein the method is used to diagnose or monitor the inflammation associated with a respiratory disease.

9. The method of Claim 8 wherein the method is used to diagnose or monitor the inflammation associated with adult respiratory distress syndrome or chronic obstructive pulmonary disease.

10. A method of diagnosing or monitoring general inflammation in an animal comprising:

(a) determining the quantity of a post-translationally modified protein which is a protein marker of general inflammation, other than phosphorylated tau, present in a body fluid of the animal; and

(b) determining if the quantity of the post-translationally modified protein is significantly altered compared to its level in the same body fluid from normal animals to determine if inflammation is present.

11. The method of Claim 10 wherein the quantities of two or more post-translationally

modified proteins in one or more body fluids are determined.

12. The method of Claim 10 wherein the body fluid is serum or plasma.

13. The method of Claim 10 wherein the protein is phosphorylated.

14. The method of Claim 10 wherein the protein is cysteinylated.

15. The method of Claim 10 wherein the protein is albumin.

16. The method of Claim 15 wherein the albumin is phosphorylated.

17. The method of Claim 15 wherein the albumin is cysteinylated.

18. The method of Claim 10 further comprising:

(c) determining the quantity of a post-translationally modified indicator protein, other than phosphorylated tau, present in a body fluid of the animal; and

(d) determining if the quantity of the post-translationally modified indicator protein is significantly altered compared to its level in the same body fluid from normal animals to determine if inflammation is present in an organ or tissue of the animal or is associated with a disease.

19. The method of Claim 18 wherein the body fluid is serum or plasma.

20. The method of Claim 18 wherein the indicator protein is phosphorylated.

21. The method of Claim 18 wherein the indicator protein is cysteinylated.

22. The method of Claim 18 wherein the quantities of two or more post-translationally modified indicator proteins in one or more body fluids are determined.

23. A method of diagnosing or monitoring inflammation in an animal comprising:

(a) determining the quantity of a post-translationally modified indicator protein, other than phosphorylated tau, present in a body fluid of the animal; and

(b) determining if the quantity of the post-translationally modified indicator protein is significantly altered compared to its level in the same body fluid from normal animals to determine if inflammation is present.

24. The method of Claim 23 wherein the body fluid is serum or plasma.

25. The method of Claim 23 wherein the indicator protein is phosphorylated.

26. The method of Claim 23 wherein the indicator protein is cysteinylated.

27. The method of Claim 23 wherein the quantities of two or more post-translationally modified indicator proteins in one or more body fluids are determined.

28. A method of diagnosing or monitoring inflammation in an animal comprising:

(a) determining the quantity of a post-translationally modified organ-specific or tissue-specific protein, other than phosphorylated tau, present in a body fluid of the animal; and

(b) determining if the quantity of the post-translationally modified organ-specific or tissue-specific protein is significantly altered compared to its level in the same body fluid from normal animals to determine if inflammation is present in an organ or tissue.

29. The method of Claim 28 wherein the body fluid is serum or plasma.

30. The method of Claim 28 wherein the protein is phosphorylated.

31. The method of Claim 28 wherein the protein is cysteinylated.

32. The method of Claim 28 wherein the quantities of two or more post-translationally modified organ-specific or tissue-specific proteins in one or more body fluids are determined.

33. A method of diagnosing or monitoring inflammation in an animal comprising:

(a) determining the quantity of a post-translationally modified disease-specific protein, other than phosphorylated tau, present in a body fluid of the animal; and

(b) determining if the quantity of the post-translationally modified protein is significantly altered compared to its level in the same body fluid from normal animals to determine if inflammation associated with a disease is present.

34. The method of Claim 33 wherein the body fluid is serum or plasma.

35. The method of Claim 33 wherein the protein is phosphorylated.

36. The method of Claim 33 wherein the protein is cysteinylated.

37. The method of Claim 33 wherein the quantities of two or more post-translationally modified disease-specific proteins in one or more body fluids are determined.

38. The method of any one of Claims 1-37 wherein the quantity(ies) of the post-translationally modified protein(s) is(are) determined by a binding-partner assay.

39. The method of Claim 38 wherein the binding-partner assay is an immunoassay.

40. A method of diagnosing or monitoring a disease comprising:

determining the quantity(ies) of one or more post-translationally modified proteins by a method of any one of Claims 1-37;

obtaining one or more additional diagnostic parameters; and

using the quantity(ies) of the one or more post-translationally modified protein(s) and the additional diagnostic parameter(s) to diagnose or monitor the disease.

41. The method of Claim 40 wherein the quantity(ies) of the post-translationally modified protein(s) is(are) determined by a binding-partner assay.

42. The method of Claim 41 wherein the binding-partner assay is an immunoassay.

43. The method of Claim 41 wherein the binding-partner is an antibody or an aptamer.

44. A method of diagnosing or monitoring ischemia in an organ or tissue of an animal comprising:

(a) determining the quantity of a post-translationally modified organ-specific or tissue-specific protein, other than phosphorylated tau, present in a body fluid of the animal without denaturing the protein prior to making the determination; and

(b) determining if the quantity of the post-translationally modified protein is significantly altered compared to its level in the same body fluid from normal animals to determine if ischemia is present in the organ or tissue.

45. The method of Claim 44 wherein the body fluid is serum or plasma.

46. The method of Claim 44 wherein the protein is phosphorylated.

47. The method of Claim 44 wherein the protein is cysteinylated.

48. The method of Claim 44 wherein the quantities of two or more post-translationally modified organ-specific or tissue-specific proteins in one or more body fluids are determined.

49. The method of Claim 44 further comprising determining the quantity of a post-translationally modified protein which is a general marker of ischemia present in a body fluid from the animal.

50. The method of Claim 49 wherein the body fluid is serum or plasma.

51. The method of Claim 49 wherein the protein is phosphorylated.

52. The method of Claim 49 wherein the protein is cysteinylated.

53. The method of Claim 49 wherein the protein is albumin.

54. The method of Claim 53 wherein the albumin is phosphorylated.

55. The method of Claim 53 wherein the albumin is cysteinylated.

56. The method of Claim 49 wherein the quantities of two or more post-translationally modified proteins which are general markers of ischemia are determined to determine if ischemia is present.

57. The method of any one of Claims 44-56 wherein the quantity(ies) of the post-translationally modified protein(s) is(are) determined by a binding-partner assay.

58. The method of Claim 57 wherein the binding-partner assay is an immunoassay.

59. The method of any one of Claims 44-56 further comprising;

obtaining one or more additional diagnostic parameters of ischemia; and

using the quantity(ies) of the one or more post-translationally modified proteins and the additional diagnostic parameter(s) to diagnose or monitor the ischemia.

60. The method of Claim 59 wherein the quantity(ies) of the post-translationally modified protein(s) is(are) determined by a binding-partner assay.

61. The method of Claim 60 wherein the binding-partner assay is an immunoassay.

62. A method of diagnosing or monitoring cardiac ischemia in an animal comprising:

(a) determining the quantity of a post-translationally modified heart-specific protein present in a body fluid of the animal without denaturing the protein prior to making the determination; and

(b) determining if the quantity of the post-translationally modified heart-specific protein is significantly altered compared to its level in the same body fluid from normal animals to determine if ischemia is present.

63. The method of Claim 62 wherein the body fluid is serum or plasma.

64. The method of Claim 62 wherein the protein is phosphorylated.

65. The method of Claim 62 wherein the protein is cysteinylated.

66. The method of Claim 62 wherein the protein is post-translationally modified cardiac troponin I.

67. The method of Claim 66 wherein the protein is phosphorylated cardiac troponin I.

68. The method of Claim 66 wherein the protein is cysteinylated cardiac troponin I.

69. The method of Claim 62 wherein the protein is post-translationally modified cardiac troponin T.

70. The method of Claim 69 wherein the protein is phosphorylated troponin T.

71. The method of Claim 69 wherein the protein is cysteinylated cardiac troponin T.

72. The method of Claim 62 wherein the quantities of two or more post-translationally modified heart-specific proteins in one or more body fluids are determined.

73. The method of Claim 62 wherein the quantity of a post-translationally modified protein which is a general marker of ischemia present in a body fluid is also determined.

74. The method of Claim 73 wherein the body fluid is serum or plasma.

75. The method of Claim 73 wherein the protein is phosphorylated.

76. The method of Claim 73 wherein the protein is cysteinylated.

77. The method of Claim 73 wherein the protein is albumin.

78. The method of Claim 75 wherein the albumin is phosphorylated.

79. The method of Claim 75 wherein the albumin is cysteinylated.

80. The method of Claim 73 wherein the quantities of two or more post-translationally modified proteins which are general markers of ischemia are determined.

81. The method of any one of Claims 62-80 wherein the quantity(ies) of the post-translationally modified protein(s) is(are) determined by a binding-partner assay.

82. The method of Claim 81 wherein the binding-partner assay is an immunoassay.

83. The method of any one of Claims 62-80 further comprising;

obtaining one or more additional diagnostic parameters of cardiac ischemia; and

using the quantity(ies) of the one or more post-translationally modified proteins and the additional diagnostic parameter(s) to diagnose or monitor the ischemia.

84. The method of Claim 83 wherein the additional diagnostic parameter is an electrocardiogram, a cardiac troponin I level, a cardiac troponin T level, or combinations of the foregoing.

85. The method of Claims 83 wherein the quantity(ies) of the post-translationally modified protein(s) is(are) determined by a binding-partner assay.

86. The method of Claim 85 wherein the binding-partner assay is an immunoassay.

87. A method for the early diagnosis of cardiac ischemia in an animal comprising performing the steps of the method of any one of Claims 62-80 within the first 24 hours after the onset of symptoms indicative of cardiac ischemia.

88. The method of Claim 87 wherein the steps of the method of any one of Claims 62-80 are performed within the first 12 hours after the onset of symptoms indicative of cardiac ischemia.

89. The method of Claim 87 wherein the quantity(ies) of the post-translationally modified protein(s) is(are) determined by a binding-partner assay.

90. The method of Claim 89 wherein the binding-partner assay is an immunoassay.

91. The method of Claim 87 further comprising;

obtaining one or more additional diagnostic parameters of cardiac ischemia; and

using the quantity(ies) of the one or more post-translationally modified proteins and the additional diagnostic parameter(s) to diagnose or monitor the ischemia.

92. The method of Claim 91 wherein the additional diagnostic parameter is an electrocardiogram, a cardiac troponin I level, a cardiac troponin T level, or combinations of the foregoing.

93. The method of Claim 88 wherein the quantity(ies) of the post-translationally modified protein(s) is(are) determined by a binding-partner assay.

94. The method of Claim 93 wherein the binding-partner assay is an immunoassay.

95. The method of Claim 88 further comprising;

obtaining one or more additional diagnostic parameters of cardiac ischemia; and

using the quantity(ies) of the one or more post-translationally modified proteins and the additional diagnostic parameter(s) to diagnose or monitor the ischemia.

96. The method of Claim 95 wherein the additional diagnostic parameter is an electrocardiogram, a cardiac troponin I level, a cardiac troponin T level, or combinations of the

foregoing.

97. A method of diagnosing or monitoring placental ischemia in a pregnant animal comprising:

(a) determining the quantity of a post-translationally modified pregnancy-associated protein present in a body fluid of the animal; and

(b) determining if the quantity of the post-translationally modified protein is significantly altered compared to its level in the same body fluid from normal pregnant animals to determine if ischemia is present.

98. The method of Claim 97 wherein the body fluid is maternal serum or plasma.

99. The method of Claim 97 wherein the protein is phosphorylated.

100. The method of Claim 97 wherein the protein is cysteinylated.

101. The method of Claim 97 wherein the protein is post-translationally modified β-human chorionic gonadotropin, α-fetoprotein, pregnancy-associated protein 1A, erythropoietin, angiotensin, or combinations of the foregoing

102. The method of Claim 97 wherein the quantities of two or more post-translationally modified pregnancy-associated proteins in one or more body fluids are determined.

103. The method of Claim 97 further comprising determining the quantity of a post-translationally modified protein which is a general marker of ischemia present in a body fluid.

104. The method of Claim 103 wherein the body fluid is maternal serum or plasma.

105. The method of Claim 103 wherein the protein is phosphorylated.

106. The method of Claim 103 wherein the protein is cysteinylated.

107. The method of Claim 103 wherein the protein is albumin.

108. The method of Claim 107 wherein the protein is phosphorylated.

109. The method of Claim 107 wherein the protein is cysteinylated.

110. The method of Claim 103 wherein the quantities of two or more post-translationally modified proteins which are general markers of ischemia are determined.

111. The method of any one of Claims 97-110 wherein the quantity(ies) of the post-translationally modified protein(s) is(are) determined by a binding-partner assay.

112. The method of Claim 111 wherein the binding-partner assay is an immunoassay.

113. The method of any one of Claims 97-110 further comprising;

obtaining one or more additional diagnostic parameters of placental ischemia; and

using the quantity(ies) of the one or more post-translationally modified proteins and the additional diagnostic parameter(s) to diagnose or monitor the placental ischemia.

114. The method of Claim 113 wherein the quantity(ies) of the post-translationally modified protein(s) is(are) determined by a binding-partner assay.

115. The method of Claim 114 wherein the binding-partner assay is an immunoassay.

116. A method of diagnosing or monitoring ischemia in an animal comprising:

(a) determining the quantity present in a body fluid of a phosphorylated protein constituent of the body fluid; and

(b) determining if the quantity of the phosphorylated protein is significantly altered compared to its level in the same body fluid from normal animals to determine if ischemia is present.

117. The method of Claim 116 wherein the body fluid is serum or plasma.

118. The method of Claim 116 wherein the phosphorylated protein is phosphorylated albumin.

119. The method of Claim 116 wherein the ischemia is cardiac ischemia.

120. The method of Claim 116 wherein the quantity of the phosphorylated protein is determined by a binding-partner assay.

121. The method of Claim 120 wherein the binding-partner assay is an immunoassay.

122. The method of any one of Claims 116-121 further comprising;

obtaining one or more additional diagnostic parameters of ischemia; and

using the quantity of phosphorylated protein and the additional diagnostic parameter(s) to diagnose or monitor the ischemia.

123. The method of Claim 122 wherein the ischemia is cardiac ischemia and the additional diagnostic parameter is an electrocardiogram, a cardiac troponin I level, a cardiac troponin T level, or combinations of the foregoing.

124. A method of diagnosing or monitoring ischemia in an animal comprising:

(a) determining the quantity present in a body fluid of a phosphorylated protein, wherein the phosphorylation of the protein occurred at least in part by substrate phosphorylation; and

(b) determining if the quantity of the phosphorylated protein is significantly altered compared to its level in the same body fluid from normal animals to determine if ischemia is present.

125. The method of Claim 124 wherein the body fluid is serum or plasma.

126. The method of Claim 124 wherein the phosphorylated protein is phosphorylated albumin.

127. The method of Claim 124 wherein the ischemia is cardiac ischemia.

128. The method of Claim 127 wherein the phosphorylated protein is troponin I.

129. The method of Claim 127 wherein the phosphorylated protein is troponin T.

130. The method of Claim 124 wherein the quantity of the phosphorylated protein is determined by a binding-partner assay.

131. The method of Claim 130 wherein the binding-partner assay is an immunoassay.

132. The method of any one of Claims 124-131 further comprising;

obtaining one or more additional diagnostic parameters of ischemia; and

using the quantity of phosphorylated protein and the additional diagnostic parameter(s) to diagnose or monitor the ischemia.

133. The method of Claim 132 wherein the ischemia is cardiac ischemia and the additional diagnostic parameter is an electrocardiogram, a cardiac troponin I level, a cardiac troponin T level, or combinations of the foregoing.

134. A method of diagnosing or monitoring ischemia in an animal comprising:

(a) determining the quantity of a cysteinylated protein present in a body fluid of the animal; and

(b) determining if the quantity of the cysteinylated protein is significantly altered compared to its level in the same body fluid from normal animals to determine if ischemia is present.

135. The method of Claim 134 wherein the body fluid is serum or plasma.

136. The method of Claim 134 wherein the cysteinylated protein is cysteinylated albumin.

137. The method of Claim 134 wherein the ischemia is cardiac ischemia.

138. The method of Claim 134 wherein the ischemia is bowel ischemia.

139. The method of any one of Claims 134-138 wherein the quantity of the cysteinylated protein is determined by a binding-partner assay.

140. The method of Claim 139 wherein the binding-partner assay is an immunoassay.

141. The method of any one of Claims 134-138 further comprising;

obtaining one or more additional diagnostic parameters of ischemia; and

using the quantity of the cysteinylated protein and the additional diagnostic parameter(s) to diagnose or monitor the ischemia.

142. The method of Claim 141 wherein the quantity of the cysteinylated protein is determined by a binding-partner assay.

143. The method of Claim 142 wherein the binding-partner assay is an immunoassay.

144. The method of Claim 143 wherein the ischemia is cardiac ischemia and the additional diagnostic parameter is an electrocardiogram, a cardiac troponin I level, a cardiac troponin T level, or combinations of the foregoing.

145. A method of diagnosing or monitoring placental ischemia in a pregnant animal comprising:

(a) determining the quantity of a cysteinylated protein present in a body fluid of the animal; and

(b) determining if the quantity of the cysteinylated protein is significantly altered compared to its level in the same body fluid from normal pregnant animals to determine if placental ischemia is present.

146. The method of Claim 145 wherein the body fluid is maternal serum or plasma.

147. The method of Claim 145 wherein the cysteinylated protein is cysteinylated albumin.

148. The method of any one of Claims 145-147 wherein the quantity of the cysteinylated protein is determined by a binding-partner assay.

149. The method of Claim 148 wherein the binding-partner assay is an immunoassay.

150. The method of any one of Claims 145-147 further comprising;

obtaining one or more additional diagnostic parameters of placental ischemia; and

using the quantity of the cysteinylated protein and the additional diagnostic parameter(s) to diagnose or monitor the placental ischemia.

151. The method of Claim 150 wherein the quantity of the cysteinylated protein is determined by a binding-partner assay.

152. The method of Claim 151 wherein the binding-partner assay is an immunoassay.

153. A method of diagnosing, monitoring or predicting multiple organ failure in an animal comprising:

(a) determining the quantity of a post-translationally modified protein present in a body fluid of the animal; and

(b) determining if the quantity of the post-translationally modified protein is significantly altered compared to its level in the same body fluid from normal animals to determine if multiple organ failure is present or will develop.

154. The method of Claim 153 wherein the body fluid is serum or plasma.

155. The method of Claim 153 wherein the post-translationally-modified protein is a post-translationally modified albumin.

156. The method of Claim 153 wherein the post-translationally-modified protein is a cysteinylated protein.

157. The method of Claim 156 wherein the cysteinylated protein is cysteinylated albumin.

158. The method of any one of Claims 153-157 wherein the quantity of the post-translationally-modified protein is determined by a binding-partner assay.

159. The method of Claim 158 wherein the binding-partner assay is an immunoassay.

160. The method of any one of Claims 153-157 further comprising;

obtaining one or more additional diagnostic parameters of multiple organ failure; and

using the quantity of the post-translationally-modified protein and the additional diagnostic parameter(s) to diagnose, monitor or predict the multiple organ failure.

161. The method of Claim 160 wherein the quantity of the post-translationally-modified protein is determined by a binding-partner assay.

162. The method of Claim 161 wherein the binding-partner assay is an immunoassay.

163. A binding partner specific for phosphorylated albumin.

164. A binding partner specific for a cysteinylated blood protein.

165. The binding partner of Claim 164 which is specific for cysteinylated albumin.

166. A binding partner specific for a cysteinylated organ-specific or tissue-specific protein.

167. The binding partner of Claim 166 which is specific for a cysteinylated heart-specific protein.

168. The binding partner of Claim 167 which is specific for cysteinylated troponin I.

169. The binding partner of Claim 167 which is specific for cysteinylated troponin T.

170. A binding partner specific for a post-translationally modified pregnancy-associated protein.

171. The binding partner of Claim 170 which is specific for a cysteinylated pregnancy-associated protein.

172. The binding partner of Claim 171 which is specific for cysteinylated β-human chorionic gonadotropin, cysteinylated α-fetoprotein, cysteinylated pregnancy-associated protein 1A, cysteinylated erythropoietin or cysteinylated angiotensin.

173. The binding partner of Claim 170 which is specific for a phosphorylated pregnancy-associated protein.

174. The binding partner of Claim 173 which is specific for phosphorylated β-human chorionic gonadotropin, phosphorylated α-fetoprotein, phosphorylated pregnancy-associated protein 1A, phosphorylated erythropoietin or phosphorylated angiotensin.

175. The binding partner of Claim 165-174 which is an antibody.

176. The binding partner of Claim 165-174 which is an aptamer.

177. A kit comprising:

a container holding a binding partner specific for a post-translationally modified protein other than phosphorylated tau; and

instructions directing that the binding partner is to be used to determine the quantity of the post-translationally modified protein present in a body fluid of an animal in order to diagnose or monitor inflammation.

178. The kit of Claim 177 wherein the protein is a post-translationally protein which can be used to diagnose or monitor general inflammation.

179. The kit of Claim 178 wherein the post-translationally-modified protein is a post-translationally modified albumin.

180. The kit of Claim 179 wherein the post-translationally-modified albumin is phosphorylated albumin.

181. The kit of Claim 179 wherein the post-translationally-modified albumin is cysteinylated albumin.

182. The kit of Claim 177 wherein the post-translationally modified protein is a post-translationally-modified indicator protein.

183. The kit of Claim 182 wherein the post-translationally modified indicator protein is a post-translationally-modified organ-specific or tissue-specific protein.

184. The kit of Claim 182 wherein the post-translationally modified indicator protein is a post-translationally-modified disease-specific protein.

185. The kit of Claim 177 wherein the post-translationally-modified protein is a phosphorylated protein

186. The kit of Claim 177 wherein the post-translationally-modified protein is a cysteinylated protein.

187. The kit of any one of Claims 177-186 further comprising one or more additional containers holding one or more additional binding partners specific for one or more additional post-translationally modified proteins, other than phosphorylated tau, and the instructions direct

that the additional binding partner(s) is(are) to be used to determine the quantity(ies) of the one or more additional post-translationally modified protein(s) present in one or more body fluids of an animal in order to diagnose or monitor inflammation.

188. The kit of any one of Claims 177-186 wherein the binding partner(s) is(are) antibodies.

189. The kit of Claim 187 wherein the binding partners are antibodies.

190. The kit of any one of Claims 177-186 wherein the binding partner(s) is(are) aptamers.

191. The kit of Claim 187 wherein the binding partners are aptamers.

192. A kit comprising:

a container holding a binding partner specific for a post-translationally modified organ-specific or tissue-specific protein, other than phosphorylated tau; and

instructions directing that the binding partner is to be used to determine the quantity of the post-translationally modified protein present in a body fluid of an animal in such a manner that the protein is not denatured prior to the determination in order to diagnose or monitor ischemia of the organ or tissue.

193. The kit of Claim 192 wherein the post-translationally-modified protein is a phosphorylated protein.

194. The kit of Claim 192 wherein the post-translationally-modified protein is a cysteinylated protein.

195. The kit of Claim 192 wherein the post-translationally-modified protein is a post-translationally modified heart-specific protein.

196. The kit of Claim 195 wherein the post-translationally-modified heart-specific protein is a post-translationally modified troponin I.

197. The kit of Claim 196 wherein the post-translationally-modified troponin I is phosphorylated troponin I.

198. The kit of Claim 196 wherein the post-translationally-modified troponin I is cysteinylated troponin I.

199. The kit of Claim 195 wherein the post-translationally-modified heart-specific protein is a post-translationally modified troponin T.

200. The kit of Claim 199 wherein the post-translationally-modified troponin T is phosphorylated troponin T.

201. The kit of Claim 199 wherein the post-translationally-modified troponin T is cysteinylated troponin T.

202. The kit of any one of Claims 192-201 further comprising one or more additional containers holding one or more additional binding partners specific for one or more additional post-translationally modified proteins, and the instructions direct that the additional binding partner(s) is(are) to be used to determine the quantity(ies) of the one or more additional post-translationally modified protein(s) present in a body fluid of an animal in such a manner that the protein is not denatured prior to the determination in order to diagnose or monitor ischemia of the organ or tissue.

203. The kit of any one of Claims 192-201 wherein the binding partner(s) is(are) antibodies.

204. The kit of Claim 202 wherein the binding partners are antibodies.

205. The kit of any one of Claims 192-201 wherein the binding partner(s) is(are) aptamers.

206. The kit of Claim 202 wherein the binding partners are aptamers.

207. A kit comprising:

a container holding a binding partner specific for a post-translationally modified pregnancy-associated protein; and

instructions directing that the binding partner is to be used to determine the quantity of the post-translationally modified protein present in a body fluid of a pregnant animal in order to diagnose or monitor placental ischemia.

208. The kit of Claim 207 wherein the post-translationally modified pregnancy-associated protein is a cysteinylated protein.

209. The kit of Claim 207 wherein the post-translationally modified pregnancy-

associated protein is a phosphorylated protein.

210. The kit of Claim 207 wherein the post-translationally modified pregnancy-associated protein is a post-translationally modified β-human chorionic gonadotropin, α-fetoprotein, pregnancy-associated protein 1A, erythropoietin, angiotensin, or combinations of the foregoing.

211. The kit of Claim 210 wherein the post-translationally modified pregnancy-associated protein is a cysteinylated modified β-human chorionic gonadotropin, α-fetoprotein, pregnancy-associated protein 1A, erythropoietin, angiotensin, or combinations of the foregoing.

212. The kit of Claim 210 wherein the post-translationally modified pregnancy-associated protein is a phosphorylated modified β-human chorionic gonadotropin, α-fetoprotein, pregnancy-associated protein 1A, erythropoietin, angiotensin, or combinations of the foregoing.

213. The kit of Claims 207 further comprising one or more additional containers holding one or more additional binding partners specific for one or more additional post-translationally modified proteins, and the instructions direct that the additional binding partner(s) is(are) to be used to determine the quantity(ies) of the one or more additional post-translationally modified protein(s) present in a body fluid of a pregnant animal in order to diagnose or monitor placental ischemia.

214. The kit of any one of Claims 207-213 wherein the binding partner is an antibody.

215. The kit of any one of Claims 205-213 wherein the binding partner is an aptamer.

216. A kit comprising:

a container holding a binding partner specific for a phosphorylated protein constituent of a body fluid; and

instructions directing that the binding partner is to be used to determine the quantity of the phosphorylated protein present in a body fluid of an animal in order to diagnose or monitor ischemia.

217. The kit of Claim 216 wherein the phosphorylated protein is phosphorylated albumin.

218. The kit of Claims 216 further comprising one or more additional containers holding

one or more additional binding partners specific for one or more additional post-translationally modified proteins, and the instructions direct that the additional binding partner(s) is(are) to be used to determine the quantity(ies) of the one or more additional post-translationally modified protein(s) present in a body fluid of an animal in order to diagnose or monitor ischemia.

219. The kit of Claim 216, 217 or 218 wherein the binding partner is an antibody.

220. The kit of Claim 216, 217 or 218 wherein the binding partner is an aptamer.

221. A kit comprising:

a container holding a binding partner specific for a cysteinylated protein; and

instructions directing that the binding partner is to be used to determine the quantity of the cysteinylated protein present in a body fluid of an animal in order to diagnose or monitor ischemia.

222. The kit of Claim 221 wherein the cysteinylated protein is cysteinylated albumin.

223. The kit of Claims 221 further comprising one or more additional containers holding one or more additional binding partners specific for one or more additional post-translationally modified proteins, and the instructions direct that the additional binding partner(s) is(are) to be used to determine the quantity(ies) of the one or more additional post-translationally modified protein(s) present in a body fluid of an animal in order to diagnose or monitor ischemia.

224. The kit of Claim 221, 222 or 223 wherein the binding partner is an antibody.

225. The kit of Claim 221, 222 or 223 wherein the binding partner is an aptamer.

226. A kit comprising:

a container holding a binding partner specific for a cysteinylated protein; and

instructions directing that the binding partner is to be used to determine the quantity of the cysteinylated protein present in a body fluid of a pregnant animal in order to diagnose or monitor placental ischemia.

227. The kit of Claim 226 wherein the cysteinylated protein is cysteinylated albumin.

228. The kit of Claims 226 further comprising one or more additional containers holding one or more additional binding partners specific for one or more additional post-translationally modified proteins, and the instructions direct that the additional binding partner(s) is(are) to be

used to determine the quantity(ies) of the one or more additional post-translationally modified protein(s) present in a body fluid of a pregnant animal in order to diagnose or monitor placental ischemia.

229. The kit of Claim 226, 227 or 228 wherein the binding partner is an antibody.

230. The kit of Claim 226, 227 or 228 wherein the binding partner is an aptamer.

231. A kit comprising:

a container holding a binding partner specific for a post-translationally modified protein; and

instructions directing that the binding partner is to be used to determine the quantity of the post-translationally modified protein present in a body fluid of an animal in order to diagnose, monitor or predict multiple organ failure.

232. The kit of Claim 231 wherein the post-translationally modified protein is a cysteinylated protein.

233. The kit of Claim 232 wherein the cysteinylated protein is cysteinylated albumin.

234. The kit of Claim 231 further comprising one or more additional containers holding one or more additional binding partners specific for one or more additional post-translationally modified proteins, and the instructions direct that the additional binding partner(s) is(are) to be used to determine the quantity(ies) of the one or more additional post-translationally modified protein(s) present in a body fluid of an animal in order to diagnose, monitor or predict multiple organ failure.

235. The kit of any one of Claims 231-234 wherein the binding partner is an antibody.

236. The kit of any one of Claims 231-234 wherein the binding partner is an aptamer.

237. A kit comprising:

a container holding a binding partner specific for a phosphorylated protein other than phosphorylated tau; and

a container holding a phosphatase inhibitor or a mixture of phosphatase inhibitors.

238. The kit of Claim 237 further comprising one or more additional containers holding one or more additional binding partners specific for one or more additional post-translationally

modified proteins,.

239. The kit of Claim 237 or 238 wherein the binding partner is an antibody.

240. The kit of Claim 237 or 238 wherein the binding partner is an aptamer.

241. A method of diagnosing appendicitis in an animal comprising the following steps:

(a) obtaining a first body fluid from the animal and obtaining a second body fluid from the animal, wherein the first and second body fluids may be the same or different;

(b) determining if the quantity of orthohydroxyhippuric acid (OHHA) present in the first body fluid of the animal is significantly elevated compared to its level in the same body fluid from normal animals;

(c) determining if the quantity of a marker of general inflammation present in the second body fluid of the animal is significantly altered compared to its level in the same body fluid from normal animals; and

(d) correlating the results obtained in steps (b) and (c) to the presence or absence of appendicitis.

242. The method of Claim 241 wherein the first body fluid is urine.

243. The method of Claim 242 wherein step (b) comprises:

mixing a portion of the urine from the animal being diagnosed with a color-producing reagent that produces a color when it is contacted with OHHA;

incubating the urine and the color-producing reagent for a time sufficient to allow production of the color; and

comparing the color produced to a color comparison chart or to the colors produced by standards comprising known amounts of OHHA to determine if the quantity of OHHA present in the urine is significantly elevated.

244. The method of Claim 243 wherein the color-producing reagent is ferric ions bonded to silica.

245. The method of Claim 241 wherein step (b) is performed using a binding partner assay.

246. The method of Claim 241 wherein step (c) is performed using a binding partner

assay.

247. The method of Claim 241 wherein the second body fluid is urine.

248. The method of Claim 247 wherein the marker of general inflammation is interleukin 8.

249. The method of Claim 241 wherein the second body fluid is serum or plasma.

250. The method of Claim 249 wherein the marker of general inflammation is leukocyte count.

251. The method of Claim 249 wherein the marker of general inflammation is neutrophil band count.

252. The method of Claim 241 wherein the marker of general inflammation is a post-translationally modified protein.

253. The method of Claim 249 wherein the marker of general inflammation is a post-translationally modified protein

254. The method of Claim 253 wherein the post-translationally modified protein is phosphorylated albumin.

255. The method of Claim 253 wherein the post-translationally modified protein is cysteinylated albumin.

256. The method of any one of Claims 241-255 wherein the animal is a human.

257. A kit for diagnosing appendicitis comprising Parts (A) and (B), wherein:

Part (A) comprises at least one container holding a reagent useful for determining if the quantity of orthohydroxyhippuric acid (OHHA) present in a body fluid of an animal is significantly elevated compared to its level in the same body fluid from normal animals; and

Part (B) comprises at least one container holding a reagent useful for determining if the quantity of a marker of general inflammation present in a body fluid of the animal is significantly altered compared to its level in the same body fluid from normal animals.

258. The kit of Claim 257 wherein Part (A) comprises a container holding a color-producing reagent that produces a color when contacted with OHHA.

259. The kit of Claim 258 wherein the color-producing reagent is ferric ions bonded to

silica.

260. The kit of Claim 258 or 259 further comprising a color comparison chart.

261. The kit of Claim 258 or 259 further comprising one or more containers holding standards comprising known amounts of OHHA.

262. The kit of Claim 257 wherein Part (A) comprises a container holding a binding partner specific for OHHA.

263. The kit of Claim 257 wherein Part (B) comprises a container holding a binding partner specific for a post-translationally modified protein.

264. The kit of Claim 263 wherein the post-translationally modified protein is phosphorylated albumin.

265. The kit of Claim 263 wherein the post-translationally modified protein is cysteinylated albumin.

266. The kit of Claim 257 wherein Part (B) comprises a container holding a binding partner specific for a cytokine.

267. The kit of Claim 266 wherein the cytokine is interleukin 8.

268. A kit for diagnosing appendicitis comprising:

at least one container holding a reagent useful for determining if the quantity of marker of general inflammation present in a body fluid of an animal is significantly altered compared to its level in the same body fluid from normal animals; and

instructions directing how the reagent is to be used to diagnose appendicitis.

269. The kit of Claim 268 wherein the reagent is a binding partner specific for a marker of general inflammation.

270. The kit of Claim 269 comprising a container holding a binding partner specific for a post-translationally modified protein.

271. The kit of Claim 270 wherein the post-translationally modified protein is phosphorylated albumin.

272. The kit of Claim 270 wherein the post-translationally modified protein is cysteinylated albumin.

273. The kit of Claim 269 comprising a container holding a binding partner specific for a cytokine.

274. The kit of Claim 273 wherein the cytokine is interleukin 8.